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Mayor

## HEALTH ADVISORY—NOVEL INFLUENZA A H1N1 (SWINE) VIRUS SURVEILLANCE, TESTING, REPORTING, ANTIVIRAL TREATMENT AND CHEMOPROPHYLAXIS, AND INFECTION CONTROL PRECAUTIONS

Tuesday, June 2, 2009

- ✓ Information and Instructions continue to change
- ✓ **Future updates will NOT necessarily be sent via fax**
- ✓ Check our website for updates ([www.sfdcp.org/swinefluforproviders.html](http://www.sfdcp.org/swinefluforproviders.html))

Changes include: **situational update, testing and reporting criteria and infection control recommendations.**

### Situational Update (as of 6/2/09)

Disease caused by seasonal influenza strains and the novel influenza A H1N1 (swine) virus is still occurring in California and San Francisco. However, overall influenza-like illness activity is decreasing in San Francisco and California, as it is in most areas across the United States. Exceptions to this decrease include several metropolitan areas which are experiencing ongoing outbreaks of influenza likely caused by the novel influenza A H1N1 virus.

As of June 1, CDC reports over 10,000 lab-confirmed cases of novel influenza A H1N1 virus infection in 51 states and 17 deaths. As of June 2, California reports 576 lab-confirmed and 226 probable cases from 38 counties and 2 deaths. San Francisco has 9 confirmed cases and no deaths. Cases in the United States have had clinical presentations and outcomes similar to seasonal influenza.

The California Department of Public Health and the San Francisco Department of Public Health (SFDPH) have deactivated their emergency response. However surveillance, disease control, and other response and preparedness activities will continue.

The ongoing surveillance goals are to:

- (1) Identify **severe disease** and contribute information to better understand risk factors for complications, and
- (2) Identify **clusters** of cases.

The ongoing disease containment goals are to:

- (1) slow spread especially within large group residential and institutional settings,
- (2) slow spread by encouraging healthy habits in the general population.

### Actions Requested of All Clinicians (updated 6/2/09)

1. **Submit respiratory specimens only from the following patients** for PCR testing by the Public Laboratory System (specimens not meeting these criteria will not be tested):

- a) Patients with influenza-like illness OR
- b) Patients with influenza A as determined by a rapid diagnostic test

AND who also meet at least one of the following criteria:

- ◆ Died
- ◆ Hospitalized (if info is available specific criteria will be “hospitalized for > 24 hours”)
- ◆ Are part of an outbreak or cluster of cases (outbreaks will be tested on a case by case basis)
- ◆ Live in a large-group residential or institutional setting (first cases only will be tested)

For specimen collection/submission instructions go to: [www.sfdcp.org/swinefluforproviders.html](http://www.sfdcp.org/swinefluforproviders.html).

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### **Actions Requested of All Clinicians** (updated 6/2/09)

2. **Report** to SFDPH Disease Control (415-554-2830):
  - ◆ Fatal or severe (requiring ICU) cases of influenza-like illness (including suspected cases of novel influenza A H1N1 (swine) virus, rapid influenza A test positive cases and laboratory confirmed cases of novel influenza A H1N1 (swine) virus),
  - ◆ outbreaks/clusters of influenza-like illness.
3. **Treat** swine flu cases (including suspect cases) that are hospitalized and/or at high risk for complications.
4. **Provide chemoprophylaxis** to certain close contacts of cases, as described below.
5. **Implement** infection control precautions as described below.
6. **Provide** guidance about home care of persons with influenza. SFDPH guidance (including a 2 page document and a 61 page handbook) is available at <http://www.sfcddcp.org/H1N1ill.html>.

### **Notes & Definitions** (updated 5/12/09)

- **Influenza-like illness** is defined as fever (>37.8°C or 100°F) and either cough or sore throat.
- **Close contact** to an ill person is defined as having cared for or lived with an ill person, or having been in a setting where there was a high likelihood of contact with respiratory droplets and/or body fluids of an ill person. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, physical examination, or any other contact between persons likely to result in exposure to respiratory droplets. Close contact typically does not include activities such as walking by an infected person or sitting across from a symptomatic patient in a waiting room or office.
- **Cluster of cases** is defined as several patients with influenza-like illness, not from the same household, who are grouped together in time and space.
- **Suspected case of novel influenza A H1N1 (swine) virus** is defined as a person with influenza-like illness with onset within 7 days of close contact with a probable/confirmed case of novel influenza A H1N1 (swine) virus.

### **Antiviral Treatment for Novel Influenza A H1N1 (Swine) Virus** (5/12/09)

Most cases in the USA have been mild and have not required antiviral treatment. Therefore antiviral treatment is not specifically indicated unless cases of swine influenza (including suspected cases) are

- 1) hospitalized OR
- 2) at high risk for complications of influenza.

People at high risk for complications include:

- Children age 4 years and younger, especially children younger than age 2 years
- Adults age 65 and over
- Pregnant women
- Residents of nursing homes and other chronic-care facilities.
- Persons with the following conditions:
  - chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), or metabolic disorders (including diabetes);
  - immunosuppression, including that caused by medications or by HIV infection;

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- Any condition (e.g., cognitive dysfunction, spinal cord injuries, severe seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration.
- Persons younger than 19 years of age and receiving long-term aspirin therapy.

Other patients may receive antiviral treatment at the discretion of their treating clinician. However please exercise prudent judgment in prescribing antiviral medicines for patients with mild influenza-like illness who are not at high risk for complications of influenza.

Treatment is for 5 days and, if possible, should be initiated within 48 hours of symptom onset.

### **Antiviral Post-Exposure Chemoprophylaxis for Novel Flu A H1N1 (Swine) Virus** (5/12/09)

Antiviral chemoprophylaxis is *recommended* for:

1. Employees and residents of a nursing home or other long-term care facilities experiencing an outbreak of novel influenza A H1N1 (swine) virus.
2. Health care workers who were not using personal protective equipment during close contact with a confirmed or probable case of novel influenza A H1N1 (swine) virus during the infectious period of that case (from 1 day before until 7 days after symptoms began).

Antiviral chemoprophylaxis can be *considered* for:

1. Household or institutional\* close contacts of a confirmed/probable or suspect case of novel influenza A H1N1 (swine) virus, who are at high risk for complications of influenza\*\*.
2. Patients at high risk for complications who have had close contact with an infectious health care worker with confirmed or probable case of novel influenza A H1N1 (swine) virus.

\* *Institutions are defined as facilities with household-like living arrangements such as group homes, jails, long-term care facilities.*

\*\**See list of conditions that place people at high risk for complications on the bottom of page 2.*

Duration of antiviral chemoprophylaxis *post-exposure* is 10 days after the last known exposure to an ill confirmed or probable case. Post-exposure prophylaxis is not necessary if the exposure occurred more than 7 days earlier.

Duration of antiviral chemoprophylaxis for outbreaks is for a minimum of two weeks. If new cases continue to appear duration may be extended.

### **Selection of Antiviral Drugs for Seasonal or Swine Influenza** (5/12/09)

Selection of antiviral drugs for treatment or chemoprophylaxis of influenza depends upon:

- 1) Which strains of influenza are circulating in the community;
- 2) Strain-specific resistance to antiviral drugs; and
- 3) The ability of laboratory testing to identify the specific strain infecting a patient

Circulating Strains. Seasonal influenza infections are still occurring in San Francisco and in California.

Circulating human strains include influenza A (H1N1 and H3N2 strains), and influenza B. Novel influenza A H1N1 (swine) virus is also present in our community.

Strain-Specific Resistance. In 2008-09, seasonal H1N1 influenza A was found to be resistant to oseltamivir, but sensitive to zanamivir and the adamantane drugs rimantadine and amantadine. However novel influenza A H1N1

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(swine) virus is sensitive to oseltamivir and zanamivir but resistant to the adamantanes. The adamantanes are not active against influenza B strains. See Table 1.

**Table 1: Antiviral Resistance 2008-2009, US Influenza Isolates**

	Zanamivir	Oseltamivir	Adamantanes
Influenza A H1N1 (Swine)	S	S	R
Influenza A H1N1 (Seasonal)	S	R	S
Influenza A H3N2	S	S	R
Influenza B	S	S	Not active

### Laboratory Test Results

Rapid influenza antigen tests are widely available to clinicians and are often used to help guide initial therapy. Test accuracy can be problematic with rapid antigen tests, with sensitivity and specificity in the 60-80% range compared to viral culture. Thus false positive and false negative rapid tests are common and rapid diagnostic test results should be confirmed with RT-PCR or viral culture when available.

Some rapid tests can distinguish between influenza A and B virus types, while others cannot. For more information on rapid influenza tests see: <http://www.cdc.gov/flu/professionals/diagnosis/rapidlab.htm>.

Distinguishing between influenza A subtypes H1N1 and H3N2, or between novel influenza A H1N1 (swine) virus and seasonal influenza A H1N1 subtypes, requires specialized techniques not available at most clinical laboratories. Thus clinicians typically must select an antiviral drug based on rapid diagnostic tests, or clinical presentation alone.

### Recommendations

Table 2 provides recommendations based on results of rapid diagnostic testing. **All strains are susceptible to zanamivir, therefore, for empirical treatment, it is a practical single-drug option.** Combination treatment with oseltamivir plus rimantadine\*\* is an acceptable alternative, and might be necessary for patients that cannot receive zanamivir (e.g. those age less than 7 years, or with chronic underlying airway disease, or who cannot use the zanamivir inhalation device).

**Table 2: Recommended antiviral drug based on results of rapid diagnostic tests\***

Rapid diagnostic test result	Treatment‡ or chemoprophylaxis medication(s)	
	Single drug option	Alternative
Not done or negative, but clinical suspicion for flu	Zanamivir	Oseltamivir + Rimantadine**
Positive: Influenza A	Zanamivir	Oseltamivir + Rimantadine**
Positive: Cannot distinguish Influenza A vs. B	Zanamivir	Oseltamivir + Rimantadine**
Positive: Influenza B	Oseltamivir or Zanamivir	None

\*Modified from Table in CDC Health Advisory of Dec 19, 2008 and CDC Interim Guidance on Antiviral Recommendations for Patients with Novel Influenza A (H1N1) Virus Infection and their Close Contacts ([www.cdc.gov/h1n1flu/recommendations.htm](http://www.cdc.gov/h1n1flu/recommendations.htm)).

\*\* Amantadine can be substituted for rimantadine but has increased risk of adverse events. Human data are lacking to support the benefits of combination antiviral treatment of influenza; however, these interim recommendations are intended to assist clinicians treating patients who might be infected with oseltamivir-resistant human influenza A (H1N1) virus.

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Antiviral dosing recommendations for novel influenza A H1N1 (swine) virus infection in adults and children age 1 year and older are the same as those recommended for seasonal influenza. Oseltamivir recently received FDA approval under an Emergency Use Authorization. For dosing information for children less than 1 year see: [www.cdc.gov/swineflu/childrentreatment.htm](http://www.cdc.gov/swineflu/childrentreatment.htm).

### **Infection Control Precautions for Novel Influenza A H1N1 (Swine) Virus** (Updated 6/2/09)

All healthcare facilities should adopt, at a minimum, the following measures:

- Persons with influenza-like illness should be instructed to stay at home until they have fully recovered.
- Place signs at entryway and in all patient areas instructing ALL PERSONS to cover their mouth and nose when they cough or sneeze and to wash hands or use waterless hand cleanser after coughing or sneezing.
- Instruct all persons to cover the mouth/nose with a tissue when coughing or sneezing. Throw tissue in the trash after use. If tissue is not available then use an elbow rather than hands. Wash hands or use waterless hand sanitizer after contact with respiratory secretions.
- Request all persons with fever or cough to wear a surgical mask.
- Provide masks, tissues and waterless hand cleanser in all patient areas and entryways to patient areas;
- Isolate patients with influenza-like illness as soon as possible, ideally in a private exam room or at a distance of at least 3 feet from others.
- Staff entering the exam room of a patient with influenza-like illness should wear a surgical mask until an infectious cause of illness is ruled out and should wash their hands or use waterless hand cleanser before and after interactions with the patient.
- Aerosol-generating procedures (e.g., bronchoscopy, intubation, extubation, suctioning, administering nebulized medications) should be performed, when feasible, in a negative pressure airborne infection isolation room (AIIR). Disposable fit-tested N95 respirators, eye protection (goggles or face shield), a clean, non-sterile, long-sleeved gown and gloves should be worn by health care personnel performing these procedures.

Note: Respiratory Hygiene/Cough Etiquette is now a component of Standard Precautions. To limit disease transmission year round, health care providers should implement respiratory hygiene/cough etiquette and hand hygiene procedures in the health care setting and, when possible, in the community.

Note: Please refer to CAL-OSHA for employee health and safety regulations.

### **Information for International Travelers** (updated 5/18/09)

CDC removed its recommendation that US travelers avoid travel to Mexico. The guidance is downgraded to a Travel Health Precaution (see: [www.cdc.gov/travel/content/SwineFluTravel.aspx](http://www.cdc.gov/travel/content/SwineFluTravel.aspx)):

- a. Travelers to Mexico should still take steps to protect themselves from getting novel H1N1 flu;
- b. Travelers at high risk for complications from any form of influenza should discuss with their health care provider the risks and benefits of travel in the context of their planned itinerary to Mexico and may want to postpone travel.
- c. Seasonal flu vaccine is recommended for all travelers.

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## How SFPDH Performs Testing for Novel Influenza A H1N1 (Swine) Virus (5/1/09)

The SFPDH Public Health Lab first determines whether the sample is positive for Influenza Type A. (Influenza Type A is a general category of Influenza and includes both human and swine viruses.)

Specimens positive for Influenza Type A are tested by PCR for the Human H1 or the Human H3 virus subtype.

- Those positive for either Human H1 or Human H3 are reported as such.
- Those negative for both Human H1 and Human H3 are considered “**untypable**” and, if the case meets clinical criteria, a **probable case** of novel influenza A H1N1 (swine) Virus. (This is because the novel influenza A H1N1 (swine) virus is NOT detectable by our PCR test when it is sub-typed by PCR.) These specimens are submitted to the California State Laboratory for confirmation and final determination of novel influenza A H1N1 (swine) virus.

## Adverse Events from Influenza Antiviral Medications (4/29/09)

For information about influenza antiviral medications, including contraindications and adverse effects, go to

- [www.cdc.gov/flu/professionals/antivirals/side-effects.htm](http://www.cdc.gov/flu/professionals/antivirals/side-effects.htm)
- [www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm)

Please report adverse events from influenza antivirals to the FDA: [www.fda.gov/medwatch](http://www.fda.gov/medwatch)

## Local Resources for Clinicians (5/12/09)

SFPDH website:

Swine flu page: [www.sfcddcp.org/swineflu.html](http://www.sfcddcp.org/swineflu.html)

Swine flu page for clinicians: [www.sfcddcp.org/swinefluforproviders.html](http://www.sfcddcp.org/swinefluforproviders.html)

Guidance on home care for people ill with the flu including a 2 page document and/or a 61 page booklet:  
<http://www.sfcddcp.org/H1N1ill.html>

To order 61 page Flu Home Care Guide: [http://www.sfcddcp.org/materials\\_request.html](http://www.sfcddcp.org/materials_request.html)

Hospital-based clinicians should call their hospital's Swine Flu Point of Contact. Most hospitals designated an Infection Control Professional as their Swine Flu Point of Contact.

If the above resources do not provide adequate information:

- For more urgent issues clinicians may call 415-554-2830.

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